

Psychopathy and Alcohol Abuse in Relation to the Recidivism of Sexual Offenders

By

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Abstract

The abuse of alcohol is a fundamental component to consider when assessing the risk of reoffending in sexual offenders. Previous research with sexual offenders has demonstrated that being diagnosed with an alcohol use disorder almost doubles their chance of reoffending. While there has been much research on alcoholism and sexual offenders, there remains a gap in literature considering the impact of alcohol abuse and drug abuse with psychopathic sexual offenders. A review article briefly indicated that elevated scores on the Michigan Alcohol Screening Test (MAST) might moderate the Hare Psychopathy Checklist-Revised (PCL-R) ability to predict recidivism. No, follow up study was discovered to observe further results. The current study evaluated the impact of these findings using a long-term recidivism database collected in the Ontario Region of Correction Service Canada (CSC). The database included over 500 high-risk sexual offenders from the Regional Treatment Center, Sex Offender Treatment Program (RTCSOTP). The database contained information on men, over 18 years of age, who had served at least two years in custody for a sexual offense. The PCL-R, MAST, and DAST were utilized to measure psychopathy, alcohol abuse, and drug abuse, respectively. A Cox regression analysis revealed that the PCL-R and the DAST were significant predictors of sexual and violent recidivism, but the MAST was not a significant predictor of sexual and violent recidivism. The MAST did not impact the PCL-R's capability of predicting recidivism in a moderate to high-risk sample, as previously observed. While the result of non-significant MAST prediction was contrary to previous findings, these results indicate that targeting drug abuse should continue to be a component in sexual offender treatment programs. Alcohol abuse cannot be excluded definitively from the study of recidivism.

Keywords: Sexual offenders, recidivism, psychopathy, substance abuse

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Chapter 1: Introduction

The evaluation and treatment of sexual offenders has significantly advanced in the last 20 years (Mann, Hanson & Thornton, 2010; Seto & Fernandez, 2011). Only two decades ago, researchers questioned whether sexual offenders were treatable (Looman, Dickie & Abracen, 2005). The assessment, treatment, and management of sexual offenders is essential to the criminal justice system because of concerns regarding community safety (Abracen, et al., 2004, Abracen, Looman, Ferguson, 2017). The sexual offenders reoffending rates generally appear low with approximately 13% reoffending with a 4-5 year follow up (Hanson & Bussiere, 1998; Hanson et al., 2002; Hanson, & Morton-Bourgon, 2005). Research however indicates that sexual assault remains one of the most underreported crimes (Benoit, Shumka, Phillips, Kennedy, & Belle-Isle, 2015; Statistics Canada, 2008). For instance, according to the General Social Survey (GSS) on Canadians Safety (victimization), in 2014, there were approximately 636,000 self-reported sexual assaults (Conroy & Cotter, 2017). The GSS indicated that 83% (eight in ten) of sexual assaults were not reported to the police during 2014. Individuals with the highest risk of being a victim to a sexual assault in Canada are women who are young, aboriginal, single, homosexual or bisexual (Conroy & Cotter, 2017). While many victims reported no physical injuries, many reported emotional consequences including feeling upset, angry, or confused, as well as PTSD like symptoms (Conroy & Cotter, 2017). One in four victims reported that following the incident, they had difficulty carrying out everyday activities as they felt unsafe and less trusting of others (Conroy & Cotter, 2017; Culbertson, Vik & Kooiman, 2001). Because of the significant adverse consequences experienced by sexual assault victims, it is crucial to limit offenders from committing future assaults (Abracen et al., 2017).

While there are many different operational definitions of recidivism, most encompass the concept of an original arrest, followed by the release from incarceration, and concluding with rearrests for a new crime (Ostermann, Salerno & Hyatt, 2015; Zgoba & Salerno, 2017). The goal of treatment programs is to significantly reduce the risk of recidivism among released sex offenders (Schweitzer & Dwyer, 2003; Mpofu, Athanasou, Rafe & Belshaw, 2018). Multiple treatment programs have demonstrated success in reducing the risk of recidivism in sexual offenders (Hanson et al., 2002; Abracen, Looman & Langton, 2008). Previous research observed treated and untreated sex offenders who were matched according to their level of risk of reoffending (Looman, Abracen & Nicholaichuk, 2000; Friendship, Mann & Beech, 2003). Researchers found that sex offenders who participated in treatment programs were significantly less likely to re-offend than those who were untreated. In jurisdictions like Canada where most, if not all, sexual offenders are offered treatment and noteworthy incentives for attending treatment, including potential early release, it is crucial to offer practical and beneficial treatment programs (Abracen et al., 2008). The optimism regarding the treatment of sexual offenders has influenced many to continue evaluating characteristics to develop optimal programs.

The goal of the current study was to observe a long-term analysis of sexual offenders' recidivism and contributing factors. The impact of alcohol abuse and drug abuse on the recidivism of sexual offenders was further explored. Additionally, psychopathy was measured to observe its predictive ability of recidivism, as well as the effect other covariates may have in conjunction with psychopathy. To the best of my knowledge, there is limited research using reliable and validated standardized tests that observe the relationship between psychopathy, and alcohol and drug abuse with regards to the recidivism of sexual offenders.

1.1 Treatment of Sexual Offenders

A concern about the effectiveness of treatment with sex offenders is the heterogeneity of this population in terms of both predispositions to offending and the severity of their actions (Hildebrand, de Ruiter, & de Vogel, 2004; Olver & Wong, 2006). For instance, sexual offenders include any individual who sexually offends against men, women, and children; these include both extra-familial and intra-familial offenders. There are also individuals who expose themselves to unsuspecting victims and others who engage in viewing pornographic images of minors online, neither offender physically touching the victim. However, research throughout the years has allowed correctional services to create optimal treatment programs that often entail the use of cognitive-behavioral interventions (Mailloux et al., 2003; Abracen et al., 2008; Smith, Gendreau & Swartz, 2009; Abracen & Looman, 2016; Abracen, Looman & Gallo, 2017).

The Risk, Need, and Responsivity (RNR) model has been the primary approach toward treatment in Canada, New Zealand, and the United Kingdom (Andrews & Bonta, 2010). The risk component of the RNR treatment model focuses on assessing the risk of reoffending, using actuarial measures with a specific focus on high-risk offenders. The need component of the RNR model focuses on the criminogenic needs that have been associated with recidivism. A criminogenic need is defined as an issue associated with criminal behavior (Andrews & Bonta, 2010). Dynamic criminogenic needs (e.g., alcohol abuse) are viewed as the focus, as they are amenable to change, while static criminogenic needs (e.g., age of first offense) cannot be altered. Andrew and Bonta (2010) have classified dynamic criminogenic needs into eight main groups labeled the "Big 8". These eight criminogenic needs include a history of antisocial behavior, criminal personality, criminal associates, criminal attitudes, substance abuse, questionable circumstances at home, school or work, and limited positive leisure activities. In a study

completed by Meloy (2005), the most powerful predictors of probation failure versus success in a sample of 917 sexual offenders were found to be race, committed relationships, residential instability, drug abuse, criminal history, and the cumulative total of behavior and treatment conditions imposed. Of Meloy's six predictors, two were static criminogenic needs (e.g., race and criminal history) which are not able to be altered through treatment. Drug abuse, being in a committed relationship, and residential instability are however dynamic criminogenic needs. Including dynamic predictors in treatment programs may be beneficial as an area of focus and guidance. The responsivity component of the RNR model emphasizes that the treatment should be delivered in the manner which is consistent with the offender's style of learning (Andrews & Bonta, 2010). Hanson, Bourgon, Helmus, and Hodgson (2009) observed treatment effect of 23 studies based on their adherence to the RNR model. The authors indicated that programs which utilized the RNR model had a greater reduction in sexual recidivism compared to treatment programs that did not use the model.

A modified version of the RNR model was employed at the Regional Treatment Center, Sex Offender Treatment Program (RTCSOTP). The RTCSOTP is described in detail at a later point in the current study. Eighty-nine sexual offenders who did not receive institutionally based sex offender treatment were compared to 89 individuals treated at the RTCSOTP, matched on age of index offense, date of index offense, and prior criminal history (Looman et al., 2000). The matched comparison groups were monitored for approximately ten years. Results revealed that 23.6% of the treated group reoffended sexually while 51.7% of the non-treated group reoffended sexually. These results indicated that the RTCSOTP had a .54 treatment effect concerning sexual recidivism (Looman et al., 2005). Treatment effect refers to the proportion of which recidivism in the treatment group is reduced when compared to the untreated group. Based on prior

research, institutional programs reached an upper limit of approximately .50 treatment effect. Therefore, the RTCSTOP's treatment effect of .54 is indicative of a particularly successful treatment program (Andrews, Bonta & Hoge, 1990; Looman et al., 2005).

Recently, an expansion to the RNR model was implemented for sexual offenders by adding an intergraded approach, focusing not only on the Big 8 but also on serious mental illness and complex trauma (Abracen et al., 2014; Abracen et al., 2017; Abracen & Looman, 2016; Looman & Abracen, 2013). Multidimensional approaches to treatment have been beneficial in treating sexual offenders. Studies regarding serious mental illness have shown that a paraphilic diagnosis or a personality disorder diagnosis alone was not significant in increasing recidivism. In a sample of 118 sexual offenders however, those who exhibited both a paraphilic and personality disorder had their likelihood of reoffending increased from 9.6% to 20.9%, respectively. (Abracen & Looman, 2006). The RNR-I model, since renamed the Integrated Risk Assessment and Treatment System (IRATS) model, helps offenders with negative emotionality and symptom management, and imparts strategies to address internal and external high-risk situations that comprise of specific feelings or places that may increase their chance of reoffending (Abracen et al., 2017; Abracen et al.,2017).

The IRATS model imparts clinicians with an overview of factors that are often encountered within the sex offender population (see Appendix A). The model allows clinicians to adjust treatment for each offender by suggesting how serious mental illness and complex trauma interacts with criminogenic needs (Abracen, Gallo, Looman & Goodwill, 2016). The IRATS model focuses on critical components of reoffending throughout the individual's life as well as precursors and stressors that promote recidivism (Abracen et al., 2017; Abracen et al, 2017; Abracen & Looman, 2016). The model suggests that three core constructs (i.e., attachment

and complex trauma difficulties, criminal history, and deviant arousal) must be considered during treatment, all of which can be moderated by external pressures; specifically, substance abuse.

1.2 Substance Abuse: External Pressure

Substance abuse is a recognized concern within the offender population (Abracen, Looman & Anderson, 2000; Andrews & Bonta, 2010; Langevin, Langevin, Curnoe & Bain, 2006; Looman & Abracen, 2011). Substance abuse is a dynamic criminogenic need, an external pressure and a mental health concern often associated with other mental diagnoses (Abracen et al., 2017; Andrews & Bonta, 2010; Hanson & Harris, 2000). According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-V), a diagnosis of substance abuse disorder entails pathological patterns of substance use behaviors that are organized into eleven distinct criteria (American Psychiatric Association, 2013). These criteria include consuming more of a substance to obtain similar effects, inability to abstain from use, cravings, reduced social activities due to the substance, and tolerance and withdrawal. The substance varies from legal products such as alcohol and marijuana, and illegal substances such as heroin and cocaine. The consumption of alcohol and drugs can have an impact on biological, psychological, and social functioning (Beech & Ward, 2004; Hoaken & Stewart, 2003; Langevin et al., 2006; Langevin & Lang, 1990). There are many possible side effects and disruptions in daily living due to chronic substance use, one of those being the offense of sexual crimes (see Appendix B).

Aside from the legality of the substance being abused, substance abuse is considered a dynamic criminogenic need (Abracen & Looman, 2016; Andrews & Bonta, 2010; Hanson et al., 2009; Ward & Beech, 2015). Research has consistently found that substance abuse is associated with violent crime (Baltieri & Guerra de Andrade, 2008; Boles & Miotto, 2003; Hoaken &

Stewart, 2003). Statistics have indicated that the incidence rate of alcohol abuse of the general population is 5.6% in the Netherlands, 8.5% in the United States, and 3% in Canada (De Graaf, Ten Have & Van Dorsselaer, 2010; Grant et al., 2004; Langevin et al., 2006). The prevalence of substance abuse however is remarkably higher in offender populations compared to the general population (Langevin et al., 2006; Kraanen, Scholing & Emmelkamp, 2012).

Substance abuse problems have been often connected to violent crimes, including those of sexual nature (Hoaken & Stewart, 2003; Kraanen, Scholing & Emmelkamp, 2012). A study observed substance abuse problems at the time of the crime for 237 offenders from a forensic psychiatry outpatient clinic in Amsterdam (Kraanen et al., 2012). The sample was divided into four groups based on the type of offense committed: general violent offenders (n=70), physical intimate partner violence offenders (n=82), sexual offenders (n=23) and other offenders (drugs smuggling, arson and property crimes; n=62). The results showed that there was no significant difference between the type of offense and scores that were above cut-off on the Alcohol Use Disorder Identification Test (AUDIT). There was a significant difference found between the type of offense and scores that were above cut-off on the Drug Use Disorder Identification Test (DUDIT). General violent offenders obtained significantly higher scores on the DUDIT compared to sexual offenders, intimate partner violence offenders, and other offenders. The proportion of offenders reporting being intoxicated at the time of the crime is also an important area of research (Abbey, 1991; Langevin & Lang, 1990; McClelland & Teplin, 2001; Murdoch et al., 1990). In a large-scale review, including 11 countries, results indicated that 62% of individuals convicted of violent crimes reported consuming alcohol shortly before the violent act (Murdoch et al., 1990). Alcohol abuse was more than twice as likely to contribute to violent crimes than non-violent crimes (Murdoch et al., 1990). With reference to sexual offending, prior

research suggested that alcohol was involved in 66% of rapes (Abbey, 1991). A re-examination of data by Marshall (1996) revealed that approximately 50% of the sex offenders in his study reported being intoxicated at the time of the crime and approximately 60% had problems of substance abuse. Similar results were noted by Groth and Birnbaum (1979), expressing that 50% of their sample of sexual offenders indicated using alcohol or drugs before committing their sexual assault. A more recent study observed violent offenders, intimate partner violent offenders, sexual offenders and other offenders (Kraanen et al., 2012). Results revealed that 29.9% of offenders reported being intoxicated at the time of the offense. Violent offenders had the highest percentage (48.5%) of reported intoxication at the time of the crime. Only 17.4% of sexual offenders reported being intoxicated at the time of the crime which is notably lower than previous research. The authors offered the possible explanation that sex offenders reported a lower level of intoxication as their sex offender category included offenders who viewed child pornography, a non-violent sexual offense.

Substance abuse has been suggested as a catalyst to one of several precursors to sexual offending. (Abracen et al., 2017; Langevin & Lang, 1990). Cognitive factors and expectancies relating to alcohol comprise of a global positive change, social and physical pleasure, sexual enhancement, arousal and social assertiveness in sexually deviant individuals (Abracen & Looman, 2004; Aromaki & Lindman, 2001; Barbaree & Marshall, 1991; Hoaken & Stewart, 2003; Seto & Barbaree, 1995). The presence of cognitive factors increased the likelihood of sexual aggression, specifically in individuals with anti-social personality traits (Aromaki & Lindman, 2001; DiFazio, Abracen & Looman, 2001; Hare & Neumann, 2008; Saleh, Grudzinskas, Bradford & Brodsky, 2009). A study by Aromaki and Lindman (2001) compared rapist (n=10), child molesters (n=10) and a control group (n=31) on their history of alcohol use

and cognitive expectancies surrounding alcohol consumption. Results indicated that sex offenders were significantly more likely to demonstrate alcohol-related cognitive expectancies compared to the control group. The alcohol expectancy effect proposed that individuals often consume alcohol because they expect a particular outcome (Testa, 2002). An individual may drink alcohol because it makes it easier for them to talk to women. Their disinhibition around women however may lead to aggressive behaviors and sexual harassment. Other studies have observed social and cognitive factors in models of sexual offenders (Maisto et al., 2004; Steele & Josephs, 1990). The alcohol myopia theory suggests the presence of a risky situation and the reduction of processing ability as a result of the alcohol, increases the chance of the individual acting on the situation (Maisto et al., 2004; Steele & Josephs, 1990). Once intoxicated, the individuals' ability to process social cues diminishes and may cause them to misinterpret the situation. Research has demonstrated that intoxicated individuals are more willing to partake in unsafe sexual behaviors (Maisto et al., 2004). These results suggest that alcohol may amplify pre-existing deficits in sexual offenders and may impact their ability to negotiate consensual sexual behaviors (Abracen, Looman, Di Fazio, Kelly, & Stirpe, 2006; Långström, Sjöstedt & Grann, 2004; Maisto et al., 2004; Ward, Hudson, Marshall, & Siegert, 1995).

Substance abuse is a well-established concern in sexual offenders, however, measuring alcohol and drug abuse using standardized measures is relatively recent in research (Abracen & Looman, 2004; Lightfoot & Barbaree, 1993; Looman, Abracen, DiFazio & Maillet, 2004; Marshall, 1996). Many previous studies have employed methods such as self-report data and semi or unstructured interviews rather than the use of standardized measures (Abracen et al., 2008; Abracen et al., 2000; Lightfoot & Barbaree, 1993; Kraanen & Emmelkamp, 2011). Within Marshall's review (1996), a suggestion was presented that researchers should employ more

controlled studies, using standardized measures to detect alcohol and drug abuse problems. As of 2000 there were only a few studies which used the Michigan Alcohol Screening Test (MAST) and the Drug Abuse Screening Test (DAST) to measure alcohol and drug abuse problems in sexual offenders (Abracen et al., 2000).

Langevin and Lang (1990) is the first known study to use the MAST and DAST with sexual offenders. Their sample consisted of 240 extra-familial child molesters (pedophiles), 167 intra-familial child molesters (incest), 35 sexual offenders against females (sexual aggressors) and 16 genital exhibitionists. The results denoted that less than 20% of the sample reported a history of drug abuse while over 50% reported a history of alcohol abuse. The elevation of alcohol abuse compared to drug abuse in sexual offenders was a critical finding. The lack of a non-sexual comparison group did not allow the authors to conclude that the results were unique to sexual offenders. There was also the speculation that since alcohol is a sanctioned substance, offenders were more willing to report their alcohol consumption compared to their consumption of drugs. A later study by Abracen et al., (2000) which compared rapist, child molesters and non-sexual violent offenders using the MAST, DAST and Violence Risk Appraisal Guide (VRAG). All 130 offenders were incarcerated in federal penitentiaries and assessed or treated at Ontario's Regional Treatment Center (RTC). The sexual offenders (n=106) attended the Sex Offender Treatment Program while the non-sexual violent offenders (n=24) attended a program for personality disordered offenders with violent offense histories. An evaluation of the MAST showed that rapists scored significantly higher than non-sexual violent offenders. In comparison, an evaluation using the DAST showed that non-sexual violent offenders scored significantly higher on the DAST than child molesters. Child molesters and rapist were not significantly different from one another on the MAST or the DAST ($p > .05$). The results demonstrated that the

elevation of alcohol abuse problems might be unique to sexual offenders, as over 40% of rapist and child molesters reported a severe level of alcohol abuse but only 4.2% of non-sexual violent offenders reported a severe level of alcohol abuse.

Researchers have suggested that substance abuse not only contributes to the crime itself but is also a significant predictor of the future dangerousness of the individual (Abracen et al., 2008; Langevin & Lang, 1990; Långström, Sjöstedt & Grann, 2004; Looman & Abracen, 2011). Recidivist and non-recidivists were compared in a sample of 295 incest offenders. (Kingston, Firestone, Wexler & Bradford, 2008). Alcohol abuse was a greater problem with recidivist than non-recidivist. A study in 2004 of Swedish sexual offenders (n=1,215) followed for an average of 5.7 years revealed that a history diagnosis of alcohol abuse problems almost doubled the offenders chance of reoffending (Långström et al., 2004). Despite the noteworthy relationship between substance abuse and sexual offenses, there remains limited research using standardized measures of alcohol and drug abuse with sexual offenders (Abracen et al., 2006; Looman et al., 2004).

1.3 Attachment and Complex Trauma Difficulties

1.31 Attachment. Intimacy deficits are an essential component in the treatment of sexual offenders (Abracen & Looman, 2016; Abracen et al., 2006; Abracen et al., 2017; Looman et al., 2004; Maniglio, 2012; Marshall, 1996). Bowlby's model of attachment suggests that relationships in infancy provide a framework for future relationships with others as a child and adult (Bowlby, 1982). An attachment can be defined "an affectional tie in which one individual takes another as a protective figure, finding increased security in their presence, missing them in their absence, and seeking them as a haven in times of alarm" (Main, 1996). Bowlby described that there was a notable pattern when a child is separated from their primary caregiver (Bowlby,

1982). The infant would at first protest, which included crying and searching for their parent. They would then proceed to a state of despair, obvious sadness and would eventually conclude with detachment or active avoidance of the parent figure when they returned. The pattern observed by Bowlby led to the consideration of the evolutionary importance of infant-caregiver attachment. Bowlby's theory was later expanded by determining four distinct classifications based on the child's behaviors. The four categories included Secure, Anxious/Ambivalent, Avoidant and Disorganized (Ainsworth, Blehar, Waters & Walls, 1978; Main and Solomon, 1986). Those classified as Secure had parents who were responsive to their needs. A secure attachment leads to high self-esteem and self-efficacy. Children classified as Avoidant resulted in children who presented as emotionally detached, hostile and lacked empathy. Anxious/Ambivalent classification resulted in children who were impulsive, tense, passive and attention seekers. Children classified as Disorganized displayed disoriented behaviors when their caregiver was present.

While the original attachment theory was developed based on a parent and child relationship, the theory was subsequently explored using adult romantic relationships. Results of a study of 620 respondents demonstrated that the theory could be applied to adults (Bartholomew and Horowitz, 1991; Hazan and Shaver, 1987). They suggested that adults classified as Secure displayed a sense of worthiness and believed that other people were more accepting, resulting in positive intimacy in their adult relationships. Those categorized as Anxious/Ambivalent had a sense of unworthiness which resulted in the need to seek admiration from others and present as overly dependent within their adult relationships. There included Avoidant I individuals who viewed themselves as unlovable and others as unreliable and uncaring. Their fear of rejection resulted in social isolation or the keeping of their partners at a distance. In contrast to Avoidant I

individuals, those classified as Avoidant II still viewed others negatively but saw themselves in a positive light. Adults classified as Avoidant II were often emotionally cold and dismissive of close relationships.

Using Bartholomew's attachment model, Ward et al. (1995) suggested sexual offenders could be classified into one of the three different types of insecure attachments:

Anxious/Ambivalent, Avoidant I and Avoidant II. The theory suggested that men who molest children intending to form a "love" relationship and had inconsistently affectionate parents, would likely be classified as Anxious/Ambivalent. Anxious/Ambivalent individuals tend to fall in love quickly and seek the approval of others. Men who exhibit, peep or molest children in a non-aggressive manner and had parents who were detached and lacked emotional expression, would likely be classified as Avoidant I. Avoidant I individuals tend to seek close emotional contact but are afraid of rejection to the degree that they avoid emotional relationships with adults. Finally, men who expose themselves, peep or sexually assault adults or children in an aggressive manner and had parents who were detached and lacked emotional expression, would be classified Avoidant II category. Avoidant II individuals were described as wanting to remain independent; therefore, they seek relationships that required minimal emotional investment.

While these categorizations were theoretical and may not be consistent with the categorization of sexual offenders, the study provided researchers and clinicians with a better understanding of sexually deviant behavior.

The attachment theory was also utilized to determine if the type of childhood attachment experienced by sexual offenders impacted their adult experience (Marshall, 1989; 2010).

Marshall (1989, 2010) was the first to suggest that sexual offenders who did not have a secure attachment during childhood were not able to learn proper self-confidence and interpersonal

skills to allow them to develop proper relationships with other adults. He noted that people, men in particular, who demonstrated insecure attachment styles, were more likely to attempt to meet their needs of intimacy through sexual activity (Marshall, 1989). Research has since indicated that sexual offenders (n=65) were more deficient in intimacy compared to violent nonsexual offenders (n= 15) and community controls (n=32; Seidman, Marshall, Hudson, & Robertson, 1994). Results also revealed that incest offenders (n=15) had significantly higher intimacy scores compared to rapists (n=17) and child molesters (n=15). Bumby & Hansen (1997) found some varying results in comparison with the Seidman et al. (2004) study. Their results indicated that rapists (n=27) and incest offenders (n=33) scored significantly lower on their overall intimacy in adult relationships when compared to nonsexual offenders (n=21) and community controls (n=20). However, there was no difference between incest offenders and rapist.

1.32 Loneliness. Sexual offenders' lack of intimacy in personal relationships contributes to feelings of loneliness (Bumby & Hansen, 1997; Marshall & Marshall, 2010; Marshall, 2010; Seidman et al., 1994; Shursen, Brock & Jennings, 2008). Research has suggested that poor childhood attachments increase the likelihood of intimacy deficits, accompanied by loneliness (Marshall, 2010; Marshall, 1996). In 1994, Seidman et al. conducted a study which explored the degree of loneliness in different types of sexual offenders versus non-sexual and non-offending groups. Rapists, incest offenders, non-familial child molesters, and exhibitionist were pooled together as they did not significantly differ from one another on measures of loneliness. Results revealed that sex offenders were significantly lonelier compared to wife batterers and control groups (Seidman et al., 1994). Similar results were observed by Bumby & Hansen (1997) who reported that rapists and child molesters experienced more loneliness in comparison to non-sexual offenders and community controls.

The term "loneliness" can be further divided into two subcategories, emotional and social loneliness (Weiss, 1973). Social loneliness refers to deficits in social relationships, lack of contact with friends, and minimal social support. Conversely, emotional loneliness refers to the absence of intimacy in personal relationships or deficits in close attachments. Studies have proposed that emotional loneliness is more severe than social loneliness because emotionally lonely individuals tend to score higher on anger and hostility (Diamant & Windholz, 1981; Maniglio, 2012; Shursen et al., 2008). Emotional loneliness as a construct was observed to be a better predictor of emotional and behavioral disturbances, specifically with acts of aggression (Check, Perlman & Malamuth, 1985). Bumby & Hansen (1997) further explored loneliness with sexual offenders by observing emotional and social loneliness separately. Rapists (n=27) and child molesters (n=33) reported significantly higher emotional loneliness compared to non-sexual offenders (n=21) and community controls (n=20). Rapists and child molesters were only significantly more socially lonely compared to community controls. There was no significant difference between sex offenders and non-sexual offenders on social loneliness. The results of the study reaffirm that emotional loneliness might account for most of the differences in the overall loneliness of sexual offenders (Bumby & Hansen, 1997).

Lack of intimacy in personal relationships was proposed as an explanation for the presence of aggression in emotionally lonely individuals (Ward et al., 1995). Emotionally lonely individuals are unable to partake in intimate behaviors which may lead to a superficial and emotionally unfulfilling relationship. The combination of emotional loneliness and a lack of intimacy in an individual may influence their decision to seek emotional intimacy through sexual behaviors, even if force is required (Marshall, 1989). However, the proposed model does not

include social or cultural factors, nor was the Attachment Theory used during the model's development.

1.4 Negative Emotionality Moderated by Alcohol Abuse

Research has attempted to understand why sexual offenders often exhibit a combination of alcohol abuse, lack of intimacy and emotional loneliness in comparison to non-sexual offenders (Abracen & Looman, 2016; Abracen et al., 2006; Looman & Abracen, 2011; Looman et al., 2004). A common factor between alcohol abuse, lack of intimacy and emotional loneliness that may explain their presence in sexual offenders is negative emotionality (Abracen & Looman, 2016; Abracen et al., 2017). Negative emotionality is the tendency to experience unpleasant emotional states such as fear, anger, and nervous tension (Hicks & Patrick, 2006). McGue, Slutske & Iacono (1999) found that alcohol abuse is associated with negative emotionality. Results revealed that drug abuse and alcohol abuse were associated with negative emotionality. When the effects of drug abuse were controlled, alcohol abuse was primarily associated with negative emotionality.

The perceived interaction between alcohol abuse and negative emotionality led to the hypothesis that alcohol abuse might act synergistically with the already present negative emotionality (e.g., loneliness and intimacy deficits; Abracen & Looman, 2004; Looman et al., 2004). Studies have demonstrated that a history of childhood trauma is strongly correlated with mental health diagnoses of substance abuse and diagnoses associated with negative emotionality (Courtois & Ford, 2009, Payne et al., 2014). The attachment difficulties experienced by sexual offenders may be influenced by negative emotionality, as evidenced by their problems with loneliness and low self-esteem (Marshall, 1989). Sexual offenders were observed to be lonelier and have greater intimacy deficits compared to nonsexual offenders and controls (Bumby &

Hansen, 1997; Seidman et al., 1994). Self-regulation theories have suggested that alcohol is used as a way of coping with insecurities and avoiding adverse situations (Hull & Slone, 2004). The cognitive and physiological effects of alcohol increase negative emotionality sexual offenders (Abracen et al., 2017). Alcohol abuse, in turn, may magnify the negative emotionality experienced by sexual offenders, increasing their chance of sexual offending (Abracen & Looman, 2016; Abracen et al., 2017; Looman et al., 2004).

The association between substance abuse, intimacy deficits and loneliness were explored using a group of moderate to high-risk sexual offenders (n=95) from the RTCSTP and repeat non-sexual violent offenders (n=29; Looman et al., 2004). The MAST, DAST as well as Social Intimacy Scale (SIS) and the Coping Inventory for Stressful Situation (CISS) emotional processing scale were administered to each participant. The results indicated that sexual offenders scored significantly higher on the CISS emotional processing scale compared to non-sexual violent offenders. An elevation on this scale inferred that sex offenders were more likely to resort negative emotional strategies to cope in stressful situations (Endler & Parker, 1990; Looman et al., 2004). Sexual offenders also scored significantly higher on the MAST compared to non-sexual violent offenders (Looman et al., 2004). Alcohol abuse, in turn, may impact sexual offenders' ability to cope with preexisting problems including but not limited to loneliness and intimacy deficits (Abracen et al., 2017; Looman et al., 2004, Marshall, 1996).

Negative emotionality, including loneliness and attachment problems, are target components included in the IRATS model with substance abuse being an external pressure on the target components (Abracen et al., 2017). The suggestion that alcohol abuse impacts loneliness and intimacy deficits is reinforced in the IRATS as all target components may be influenced by alcohol abuse.

1.5 Psychopathy: Criminal History

Psychopathic sexual offenders have significant concerns throughout the psychological field as the efficacy of treatment with moderate to high-risk individuals remains variable (Abracen et al., 2008; Barbaree, 2005; Hare & Neumann, 2008). The distinction between Antisocial Personality Disorder (APD) and Psychopathy is important within psychological research (Abracen et al., 2008). The combination of psychopathy and APD in past research has resulted in significant limitations within the field of psychopathic offenders (Looman, Abracen, Serin & Marquis, 2005). The DSM-V defines APD as individuals who have a persistent pattern of disregard and violation of the rights of others beginning in childhood and continuing into adulthood (APA, 2013). Cleckley (1955) was one of the first individuals to define psychopathy operationally. He demarcated psychopathic offenders using 16 criteria including chronically maladjusted, highly manipulative and the absence of empathy (see Appendix C). Researchers have suggested that the DSM-IV definition of APD relegates psychopathic traits (e.g., superficial charm) as associated features of the disorder, adding greater confusion to the distinction (Rogers, Salekin, Sewell & Cruise, 2000). While psychopathy and APD include similar descriptors like deceitfulness and manipulation, psychopathy incorporates a strict diagnostic tool, The Hare Psychopathy Checklist-Revised (PCL-R).

Hare expanded on Cleckley's characterization of psychopathic offenders by utilizing behavioral and personality characteristics to create the PCL-R, a diagnostic tool of psychopathy. The PCL-R contains two Factors each with its own two Facets (Hare, 2003). Factor 1 measures interpersonal and affective components including grandiosity and callousness while Factor 2 measures impulsive and antisocial lifestyle (see Appendix D & E). A score of 30 or more out of 40 merits a diagnosis of psychopathy. Research has demonstrated however that many individuals

with APD would not meet this cut-off (Looman et al., 2008). An evaluation of the forensic population, showed that only 15-20% of offenders meet the diagnostic criteria of psychopathy, but a substantial percentage of the offender population meet the criteria for APD (50-75%; Hare, 2003). Studies have demonstrated that a cut-off score of 25 for research purpose would still result in a group of “true psychopaths” compared to their counterparts (Hare, 2003; Olver & Wong, 2006; Quinsey, Harris, Rice & Cormier, 2006). The limited number of individuals who meet the criteria for both APD and psychopathy as defined by the PCL-R, emphasizes the importance of using the PCL-R as the defining measure of psychopathy in research.

Over the past two decades, the study of psychopathy has significantly increased (Hare, 2016; Hare & Neumann, 2008; Jones & Hare, 2016). While the majority of research previously focused on APD, as of the 2000s, writings shifted towards psychopathy (Abracen et al., 2008; Patrick, 2006). Previously, researchers had uncertainties regarding the study of psychopathic offenders because of the belief that psychopaths were untreatable (Andrews & Bonta, 2010; Abracen et al., 2008; Chakhssi, de Ruiter & Bernstein, 2010; Cleckley, 1955; Salekin, 2002). A study completed by Seto and Barbaree (1999) demonstrated that treatment might have a contradictory effect on psychopathic individuals. The study observed the relationship between psychopathy, treatment behavior, and recidivism of 216 sexual offenders in an institutional program within a Canadian federal penitentiary. Analysis revealed that men who scored high on the PCL-R and had positive treatment behavior were three times more likely to commit an offense of any kind and five times more likely to commit a severe offense compared to the other classifications (e.g., high PCL-R/negative treatment behaviour). There have since been many criticisms of the study, as well as other possible explanations for the obtained results (Barbaree, 2005). A fundamental flaw of the study by Seto and Barbaree (1999) was the use of a median

split for dividing the PCL-R groups (Abracen et al., 2008). The median split resulted in a PCL-R of 15 being the cut-off for high and low scores, instead of using a 25 or 30 cut-off score as recommended (Abracen et al., 2008; Hare, 2003; Quinsey et al., 2006). The flaw of using 15 as the cut-off suggests that the study's "high psychopathy group" might not have captured an appropriate target population because of such a low PCL-R cut-off.

In 2005, Looman et al., attempted to replicate Seto and Barbaree's (1999) results with no avail. Looman et al.'s (2005) study included 154 consecutive admissions to a treatment program in a maximum security federal penitentiary. Results indicated that there was a main effect with high PCL-R individuals having the fastest failure rate, as was expected. When treatment behaviours were observed in conjunction with the PCL-R, individuals in the high PCL-R/good treatment behavior group reoffended at a faster rate than the low PCL-R/good treatment behavior and the low PCL-R/poor treatment behavior. The high PCL-R/good treatment behavior group however did not differ from the high PCL-R/poor treatment behavior group. The results suggest that while some offenders rated as high PCL-R did re-offend at a faster rate, there is a subgroup of sexual offenders with psychopathic characteristics that can benefit from specialized cognitive-behavioral treatment.

The contradicting results of Looman, et al. (2005), as well as other opposing studies, led Barbaree to do a follow up of his initial 1999 research (Barbaree, 2005). In the follow-up study, the cut-off of the PCL-R was changed from 15, which was used in the original 1999 study, to 25. A more extensive database was used to ensure that all recidivism data was recorded (Barbaree, 2005). Results revealed that while those who scored higher on the PCL-R were more likely to re-offend compared to men who scored low on the PCL-R, there was no relationship between treatment behavior and recidivism. A Cox regression was performed using treatment behaviors

and psychopathy, which yielded psychopathy as a significant predictor of recidivism (Wald Statistic=8.17, $p<.05$), while treatment behavior was not. The results obtained in the study were not comparable to Seto & Barbaree's (1999) initial study but were similar to the results obtained by Looman et al. (2005). The varying results highlight the importance of replicating studies and awaiting an accumulation of evidence before drawing any specific conclusions. The results also highlight the usefulness of the PCL-R as a predictor of recidivism.

The PCL-R was initially created as a diagnostic tool for the assessment of psychopathy but studies have since demonstrated that the PCL-R is a useful tool in assessing risk of reoffending (Abracen & Looman, 2016; Barbaree, 2005; Hare, 2016; Hawes, Boccaccini & Murrie, 2013; Hemphill & Hare, 2004; Lally, 2003). A meta-analysis observed general recidivism across 95 studies ($n=15,826$; Leistico, Salekin, DeCoster & Rogers, 2008). The results indicated that the mean PCL-R Total score effect size was 0.55. A meta-analysis observing solely sexual recidivism reported that the PCL-R was one of the strongest predictors of sexual recidivism ($d=0.29$; Hanson & Morton-Bourgon, 2005). A more recent meta-analysis observed the PCL-R's ability to predict sexual and violent recidivism in a sex offender population (Hawes et al., 2013). The overall effect size for PCL-R scores predicting sexual recidivism was $d=0.40$ across 20 studies ($n=5,239$). The PCL-R's overall effect size for the PCL-R scores predicting violent recidivism was $d=0.63$ across ten studies ($n=1,701$). The meta-analysis also included studies that combined violent and sexual recidivism into one category. The PCL-R's overall effect size for predicting violent recidivism (including sexual recidivism) was 0.55 across 13 studies ($n=3,467$). While the PCL-R's ability to predict, sexual recidivism appears lower than violent recidivism, the results continue to support the PCL-R's ability as a predictor of recidivism in offender populations.

A meta-analysis by Salekin (2002) helped to instill some optimism in the community surrounding the treatment of psychopathy. The study expressed that a highly structured intensive treatment program can be successful in reducing recidivism in psychopathic offenders. The three programs in the meta-analysis that employed a cognitive-behavioral approach to treatment and had reoffending as their measure had a .62 success rate. The results suggested that psychopathic offenders can benefit from treatment. This meta-analysis however did not come without limitation, as it did not solely use the PCL-R as the defining measure of psychopathy. Nonetheless, the results helped motivate others to further research the treatment of high psychopathy offenders with an open mind (Abracen et al., 2008). While there has been some research on psychopathic sexual offenders, there remains limited research observing the recidivism of sexual offenders, that factors psychopathy as well as a history of alcohol abuse.

Based on previous research, alcohol abuse and psychopathy have an essential role in the evaluation of the risk of recidivism in sexual offenders (Abracen et al., 2008; Hanson & Morton-Bourgon, 2005). Långström et al. (2004) stated a prior diagnosis of alcohol abuse doubled the odds of a sexual reconviction, a diagnosis of drug use disorder tripled the odds and a diagnosis of a personality disorder increased the odds tenfold. It has been referred that a prominent history of alcohol abuse might moderate the PCL-R's ability to predict recidivism in sexual offenders (Abracen et al., 2008). The study suggested the MAST is a better predictor of recidivism than the PCL-R in sexual offenders who score high on the MAST. The samples were divided into three categories: Alcohol Group, Drug Group, and Sober Group. The Alcohol Group consisted of individuals who scored high on the MAST (above 10) and mild to moderate on the DAST (below 11). The Drug Group consisted of offenders who were high on the DAST (above 11) and mild to moderate on the MAST (below 10). The Sober Group consisted of offenders who scored mild to

moderate on the MAST and DAST and were used as a comparison group. The groups were subsequently divided further into high and low PCL-R scores. Results revealed that individuals with High PCL-R scores in the Sober Group were significantly more likely to re-offend at a faster rate compared to Low PCL-R individuals. The same results were not observed for the Alcohol Group. There was no significant difference noted between High and Low PCL-R offenders in the Alcohol Group in the analysis for recidivism. The study mentioned that analysis was not computed with the Drug Group as the results would not provide meaningful information because of the limited number of offenders in the group. While these results demonstrated that alcohol abuse might interact with the PCL-R ability to predict recidivism, no further information was ever published.

1.6 Current study

The current study expanded on the research discussed in Abracen et al., (2008) review. The review article indicated there was no significant difference in recidivism rate between the high and low PCL-R groups of sexual offenders who scored high on the MAST. The results suggest an elevation on the MAST may moderate the PCL-R's ability to predict recidivism in moderate to high-risk sexual offenders. The current study evaluated the impact of alcohol abuse, drug abuse and psychopathy on the recidivism of sexual offenders. The offenders in the current study were assessed or treated at the RTCSOTP (described below). The offenders consisted of men, at least 18 years of age, who were federally incarcerated in Canada (serving a minimum of 2 years) for a crime of sexual nature.

Currently, there are very few long-term follow-up research studies on sexual offenders. The RTCSOTP database contains over 500 sexual offenders with an average follow up of approximately five years for sexual and non-sexual violent offenses (Looman & Abracen, 2011).

Research on psychopathic sexual offenders has increased over the years (Hare, 2016; Hare & Neumann, 2008; Jones & Hare, 2016). There remains room however for growth pertaining to studies measuring psychopathy using the PCL-R as well as measuring alcohol abuse and drug abuse with standardized measures and observing criminal recidivism as the dependent variable (Abracen et al., 2006; D'Silva, Duggan & McCarthy, 2004, Looman et al., 2004; Marshall, 1996).

The ability to identify predicting factors in a high-risk sexual offender population may aid in creating an optimal treatment program that focuses on a wide range of problem behaviors. Targeting multiple underlying factors of sexual offending may allow more individuals to be reintroduced back into society with greater confidence that they will not re-offend. Understanding the interaction between tests in a moderate to high-risk population may aid in evaluating the individual's risk of reoffending and in turn assist in the reduction of number of sexual offenses occurring every year.

1.61 Hypotheses.

Hypothesis 1. The present study evaluated the PCL-R with a 25+ cut-off as a measure of psychopathy. Consistent with the research of Barbaree (2005) and Looman et al. (2005), it is hypothesized that an analysis of the PCL-R in step 1 of a Cox regression will be a significant predictor of recidivism in a sample of moderate to high-risk sexual offenders. In a 2-step Cox regression, the PCL-R must initially be measured on its own to ensure it is correctly predicting recidivism in the current sample before proceeding with other variables.

Hypothesis 2 and 3. The current study used the MAST and DAST to measure alcohol and drug abuse to ensure accurate results of substance abuse were acquired. It is hypothesized that the average MAST score would be elevated in the current sample of sexual offenders. The rate of

sexual offenders who exhibit alcohol abuse problems greatly exceeds the alcohol abuse problems within the Canadian population (Langevin et al., 2006). Based on previous research, it is also expected that when alcohol abuse is analyzed by type of index offense, there will be no significant difference between groups (Abracen et al., 2000; Abracen et al., 2006; Looman et al., 2004)

In terms of the DAST, there have been mixed results in the analysis of sexual offenders by type of index offense. Some previous studies observed a significant difference on the DAST between Rapists and Child Molesters; Rapists scoring higher than Child Molesters (Abracen et al., 2006; Baltieri & Guerra de Andrade, 2008). Other studies however have found no significant difference between the type of index offense and DAST scores (Abracen & Looman, 2011; Långström et al., 2004).

Hypothesis 4. Consistent with past research, it is hypothesized that the MAST will be a significant predictor of recidivism in sexual offenders. Previous studies have observed that the MAST significantly predicts violent and sexual recidivism in sexual offenders (Långström et al., 2004; Looman & Abracen, 2011).

Hypothesis 5. The observation of drug abuse in the current sample was exploratory as there have been varying results in terms of the DAST predictive ability of recidivism in sexual offenders. Past research has demonstrated that sexual offenders score on average in the mild range on the DAST (Abracen & Looman, 2016). Långström et al., (2004) indicated that the DAST was a significant predictor of sexual recidivism but was not a significant predictor of violent recidivism. In a 2011 study, the DAST was a significant predictor of sexual and violent recidivism on its own when using a ROC analysis (Looman & Abracen, 2011). When the MAST, DAST and SORAG were entered in a logistic regression however, the DAST was no longer

significant. As a result of the varying outcomes, no specific hypothesis was expected for the DAST's predictive ability of recidivism in sexual offenders.

Hypothesis 6. Based on the results mentioned in Abracen et al.'s (2008) review, it is expected that when the MAST and the PCL-R are analyzed within the same step of a Cox regression, the MAST will be a significant predictor of recidivism but the PCL-R will no longer be significant.

Chapter 2: Methodology

2.1 Participants

2.11 Regional Treatment Center Sex Offender Treatment Program (RTCSOTP).

The sample in this study consisted of male sexual offenders who were assessed and treated at the Regional Treatment Center Sex Offender Treatment Program (RTCSOTP, Abracen & Looman, 2016; Wilson, Looman, Abracen & Pake, 2012; Looman & Abracen, 2011; Looman et al., 2000). The RTCSOTP was located in the Kingston Penitentiary, a maximum-security federal facility and a psychiatric treatment center in Kingston, Ontario. The facility housed a high-intensity program offered to sexual offenders who were considered high risk of reoffending. The level of risk was determined based on standardized tests as well as those who presented with a high need for treatment. The program was operated by Correction Service Canada and was founded in the early 1970s by Dr. William Marshall. While the program had undergone significant changes over the years, it had always maintained a cognitive-behavioral approach to treatment. The treatment process lasted approximately six months. The most recent program before the facilities closing in 2011-2012, focused on many criminogenic and sexually specific needs including criminal thinking and intimacy deficits. The RTCSOTP was an Inpatient Program and consisted of group-based interventions, as well also Individual Therapy, to ensure

the specific needs of the individual were met. The offenders attended therapy for approximately 12 hours a week and had their behavior monitored for 24 hours a day.

2.12 RTCSOTP Database. Data for 537 offenders was available from the RTCSOTP database. The number of individuals per test and analyses varied, as all participants did not partake in every test or follow up information was not available. The average age of release for the overall sample of sexual offenders was 40.14 ($SD=10.96$), with a minimum age of release of 21 and a maximum age of 69. The average age of release from the current sample was similar to that of past Canadian research on sexual offenders. Harris and Hanson (2004) computed a meta-analysis containing three data sets from Correction Service Canada. Results revealed that the mean age of release from those data sets ranged from 31 ($SD=8.7$) to 38 ($SD=11$).

The offenders in the current sample had committed on average 1.27 ($SD= 1.16$) prior sexual offense with a minimum of 0 and a maximum of 3, suggesting that approximately half of the sample had committed one prior sexual offense. The number of prior sexual offense for the current study is seemingly lower than averages discussed in previous studies with the RTCSOTP. A study by Looman & Abracen (2011) noted that their sample of 250 offenders from the RTCSOTP had on average 3.4 ($SD=4.8$) prior sexual offenses. A similar trend was noted with non-sexual violent offenses. In the current study, the sample had committed on average 0.69 ($SD=0.46$) prior non-sexual violent offenses. Meanwhile, in Looman and Abracen's (2011) study, their sample of offenders from the RTCSOTP had committed on average 1.8 ($SD=2.3$) offenses.

Information on the type of index offense was available for 471 of the offenders. The offenders were divided into six different groups (see Table 1). Offenders who were classified as rapists included individuals who offended strictly against victims who were 16 years or older. A

classification as strictly hebephile included individuals who had a sexual preference for early pubertal minors (Beier et al., 2013). Strictly child molesters included individuals who offend against non-familial prepubescent minors (APA, 2013; Beier et al., 2013). Offenders classified in the strictly incest category included individuals who offend against intra-familial minors (Smallbones & Dadds, 1998; Stirpe, Abracen, Stermac, & Wilson, 2006). The other sex-related offenses category accounts for individuals who were charged with sexual crimes such as exhibitionism, frotteurism, and possession of child pornography. Finally, a mixed group was established to classify individuals who fell into more than one of the classifications.

Table 1

Offenders by Type of Index Offense

51% (241) Participants	Strictly Rapist
11% (53) Participants	Strictly Hebephile
25% (117) Participants	Strictly Child Molester
4% (20) Participants	Strictly Incest
4% (18) Participants	Other Sex-Related Offenses
5% (22) Participants	Mixed

2.2 Measures

Standalone measures were used to measure alcohol abuse, drug abuse, and psychopathy. The tests were administered by qualified personnel upon admission to the RTCSTP.

The Michigan Alcohol Screening Test (MAST; Selzer, 1971) is a widely used, single-factor test, to measure alcohol abuse. The MAST consists of 24 yes or no questions focusing on a lifetime abuse of alcohol (see Appendix H). Each question is scored a 0 or 1, with a score of 10 or more suggesting the individual had a severe drinking problem at one point in their life. A

score of 4 or more may be used to determine a moderate problem with alcohol abuse. The MAST was found to have higher concurrent validity when compared to other measures of lifetime history of alcohol abuse (Minnich, Erford, Bardhoshi & Atalay, 2018; Watson, Detra, Fox & Ewing, 1995). The alpha reliability for the MAST was found to be 0.89 respectively.

The Drug Abuse Screening Test (DAST; Skinner, 1982) is similar in design to the MAST and is used to measure lifelong drug abuse. The DAST consists of 20 yes or no questions each scored 0 or 1 (see Appendix I). A score of 11 or more indicates an extensive problem with drug abuse. The DAST has also demonstrated good Alpha reliabilities of 0.90 which allows the measure to be treated as single factor tests (Langevin & Lang, 1990; Yudko, Lozhkina, Fouts, 2007).

The Hare Psychopathy Checklist-Revised (PCL-R; Hare, 2003) encompasses a semi-structured interview and a file review, that is used to assess 20 psychopathic traits. Each item is scored a 0,1 or 2. The PCL-R has two factors, each of those now containing a further two facets. The first factor focuses on psychopathy, and its personality correlates while factor 2 focuses on lifestyle characteristics. For research purpose, scores of 25 or more were acceptable cut-offs for psychopathy (Olver & Wong, 2006; Quinsey et al., 2006). The PCL-R had an alpha coefficient of 0.87 with a sample of 4981 prison inmates and with another sample of 1246 inmates (Hare, 2003). The PCL-R also demonstrated high inter-rater reliability and test-retest reliability of 0.89 over five years (Rogers, 2001; Schroeder, Schroeder, and Hare, 1983). The PCL-R was initially created to measure criminal personality and behavior, but research has shown the PCL-R is also a good predictor of recidivism (Abracen & Looman, 2016; Barbaree, 2005; Hare, 2016; Hawes et al., 2013; Hemphill & Hare, 2004; Lally, 2003)

2.3 Procedure

On admittance to the RTCSOTP, participants signed a consent form before participating in any testing (see Appendix G). Within the consent form, the nature of the program was explained and included a section specifying that the data collected would be used for research purposes. The individuals were informed that they were free to withdraw their consent to the assessment or treatment at any time. The research was previously approved by the Regional Ethics Committee of Correction Service Canada. All raters of the PCL-R were trained in the administration and scoring the measure. The information obtained was subsequently combined and retained as a database on a protected computer within Correction Service Canada building located in Toronto, Ontario.

Chapter 3: Results

3.1 Data Analysis

A Pearson correlation was performed to determine the bivariate correlations between the MAST, DAST and PCL-R. Univariate analyses of variance (ANOVA) were computed to discern any difference in scores between Rapists, Hebephiles, Child Molesters, Incest Offenders, Other Sex-Related Offenses and Mixed groups on the MAST, DAST and PCL-R. The PCL-R mixed group was further divided in the ANOVA into Rapist/Child Molester, Rapist/Hebephile and Rapist/Incest Offenders instead of a Mixed group.

Chi-Square analyses were conducted between the type of offense (Rapist, Hebephiles, Child Molesters, Incest Offenders, Other Sex-Related Offenses Rapist/Child Molester, Rapist/Hebephile and Rapist/Incest Offenders) and sexual recidivism, violent recidivism and general recidivism. These analyses observed whether the groups re-offended at a different rate, regardless of their scores on the MAST, DAST and PCL-R. If the results revealed that offender

types reoffended at different rates, the possibility of combining the offenders into one sexual offender group would not be prudent.

Cox proportional hazard regressions were used as analysis to control for unequal times of risk. A Cox regression allows for modeling of time to a specified event based upon several covariates (Meyers, Gamst & Guarino, 2017; Spruance, Reid, Grace & Samore, 2004). A Cox regression is similar to a logistic regression except the analysis observes the relationship between survival time and the covariates within the model. The dependent variables (the event) are time-dependent binary outcomes. In the current study, the dependent variable is recidivism, the event. The dependent variable is measured by whether the offenders did re-offend or did not re-offend (yes or no). The independent variables (the covariates), are the MAST, DAST and PCL-R scores.

3.2 Psychometric Test Correlations

A Pearson correlation was performed between the MAST, DAST and PCL-R (see Table 2). All correlations were positive in direction. The strongest correlation was between the DAST and the MAST which accounted for 13% of the shared variance. While the correlation between the MAST and DAST was the strongest, the results still only represented a low to moderate correlation. The PCL-R and DAST had 6.2% shared variance, and the PCL-R and MAST had the weakest correlation with 1% shared variance.

Table 2

Pearson r Correlation Matrix of Psychometric Test

	PCL-R	DAST	MAST
PCL-R	--		
DAST	0.249 (0.000)	--	
MAST	0.103 (0.028)	0.361 (0.000)	--

3.3 Group Differences on Questionnaires

3.31 Alcohol Abuse. A one-way ANOVA was used to determine if there was a difference in scores on the Michigan Alcohol Screening Test between Rapist ($M=8.67$, $SD=7.19$), Hebephile ($M=6.69$, $SD=7.77$), Child Molester ($M=6.93$, $SD=7.09$), Incest ($M=9$, $SD=7$), Other Sexual Related Offenses ($M=8.94$, $SD=7.63$) and Mixed ($M=5.9$, $SD=6.7$). Results revealed no significant main effect differences among groups $F(5, 424) = 1.596$ $p=.16$, $\eta_p^2 = .018$. Because of the large sample size, power was not a serious issue for this and following group comparisons.

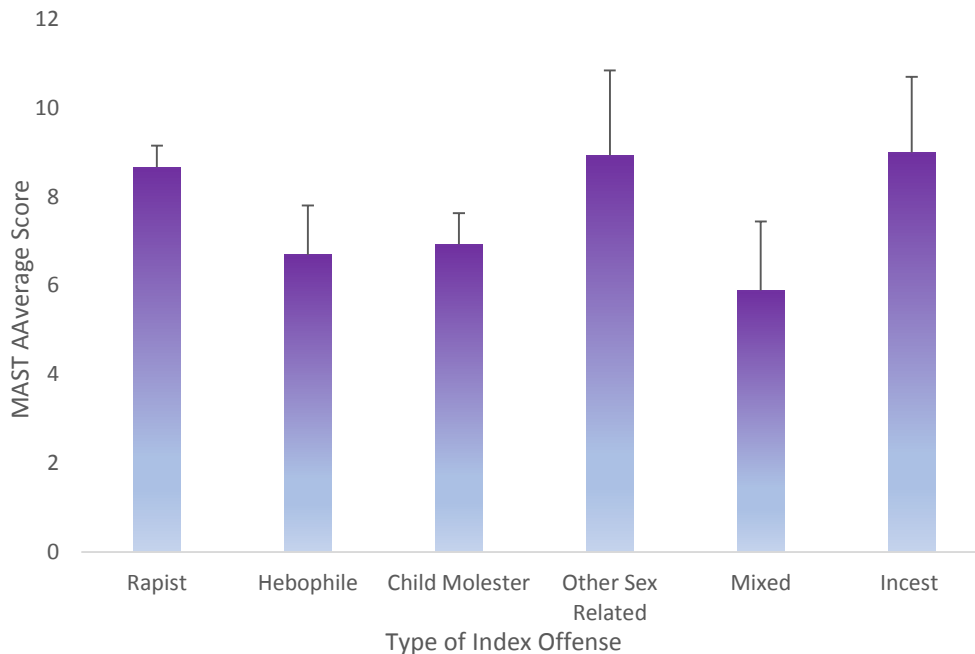


Figure 1. Mean MAST scores as a function of the type of index offense. Higher scores indicate a greater alcohol abuse problem.

3.32 Drug Abuse. A one-way ANOVA was used to determine if there was a difference in scores on the Drug Abuse Screening Test between Rapist ($M=6.4$, $SD=6.12$), Hebephile ($M=3.51$, $SD=5.01$), Child Molester ($M=4.11$, $SD=4.77$), Incest ($M=5.67$, $SD=5.65$), Other Sexual Related Offenses ($M=6$, $SD=6.36$) and Mixed ($M=7.39$, $SD=7.08$). Results indicated a

significant main effect for offender type $F(5, 423) = 3.908$ $p = .002$, $\eta_p^2 = .044$. Post hoc test (Scheffe) revealed that rapists scored significantly higher on the DAST than child molesters.

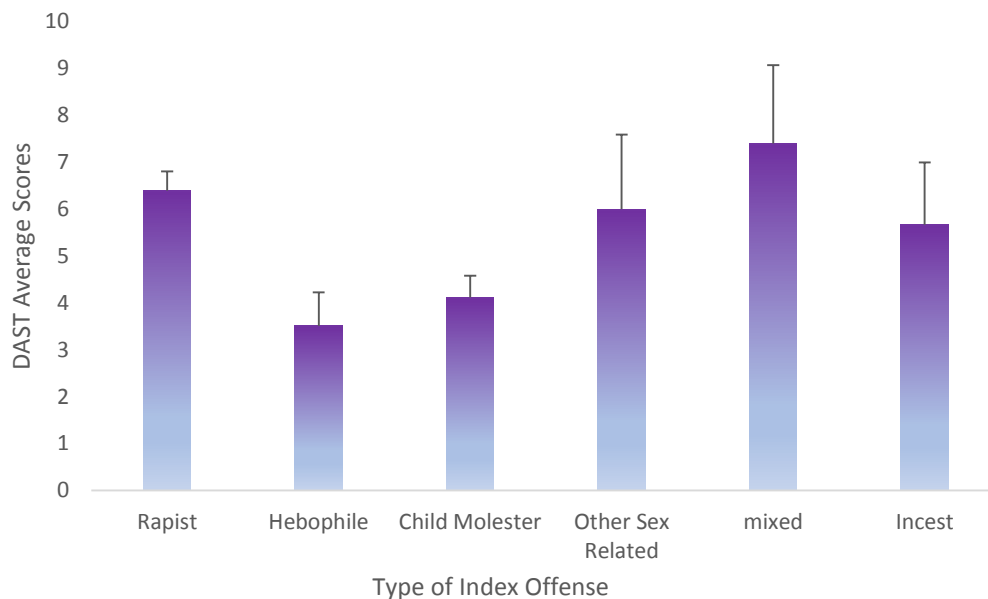


Figure 2. Mean DAST scores as a function of the type of index offense. Higher scores indicate a greater drug abuse problem.

3.33 Psychopathy. A one-way ANOVA was used to determine if there was a difference in scores on the Psychopathy Checklist-Revised between Rapist ($M = 23.31$, $SD = 7.1$), Hebephile ($M = 20.66$, $SD = 7.58$), Child Molester ($M = 19.15$, $SD = 7.36$), Incest ($M = 17.5$, $SD = 7.15$), Other Sexual Related Offenses ($M = 20.5$, $SD = 7.27$), Rapists /Hebephile ($M = 21.6$, $SD = 11.22$), Rapist/Child Molester ($M = 23.07$, $SD = 6.27$) and Incest/Rapist ($M = 15.5$, $SD = 7.48$). Results indicated a significant main effect for offender type $F(7, 463) = 5.203$ $p < .001$, $\eta_p^2 = .073$. Post hoc test (Scheffe) revealed that rapist scored significantly higher on the PCL-R than child molesters.

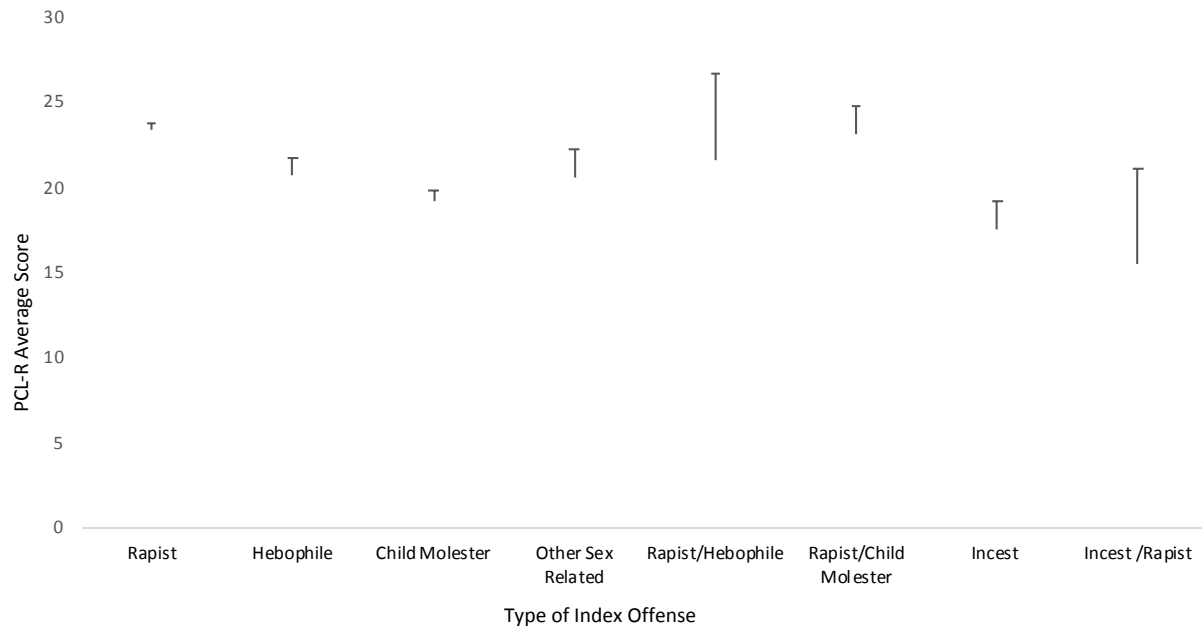


Figure 3. Mean PCL-R scores as a function of the type of index offense. Higher scores indicate a greater drug abuse problem.

3.4 Sexual, Violent and General Recidivism

3.41 Chi-Squares. Multiple Chi-Squares were performed to determine if there were any relations between the type of index offense and recidivism. All Chi-Squares were not significant $p > .05$. The results indicate that none of the types of sexual offenders reoffended at different rates from each other when observing sexual, violent and general recidivism.

3.42 Sexual Offenders as One Group. From a clinical perspective, all mean scores on the psychometric tests were in an elevated range. While there were significant differences between rapists and child molesters on the PCL-R, the mean scores for both groups fell within the moderate to high range. Similarly, with the DAST, while there was a significant difference between rapists and child molesters, both groups were classified in the mild to moderate range. The absence of an association between reoffending and type of index offense (Chi-Square results), as well as the moderate to high range scores on psychometric test across all types of

offenders, allowed for the amalgamation of the type of index offense groups into one general sexual offender group. The mean scores of the MAST, DAST and PCL-R were calculated for the entire sample as one group. The mean score of the MAST was 7.86 (SD=7.19), the DAST was 5.49 (SD=5.78), and the PCL-R was 21.58 (SD=7.57). The MAST, DAST and PCL-R scores remained in similar ranges when sexual offenders were analyzed as one group.

3.43 Cox Regressions. Of the 537 individuals in the database, approximately half of the offenders were able to be included in the analysis. As previously indicated, not all individuals completed every independent measure or the individuals follow up information was not available. Once the files without complete data were removed, a remainder of 265 complete files were used in the analysis.

A 2-step Cox regression was performed using sexual recidivism as the event. Of the 265 cases, 237 of them were censored. A censored case refers to offenders who did not re-offend. While censored cases are not used in the regression, they are used to compute the baseline hazard. The PCL-R was entered as the only covariate in the first step to ensure the test was predicting recidivism. The chi-square in the omnibus test of model coefficient for Step 1 was not significant ($p > .05$); therefore, no further action was taken.

A second 2-step Cox regression analysis was performed using sexual and violent recidivism as the event. In this analysis, 187 cases were censored. Once again, the PCL-R was entered as the only covariate in Step 1 of the regression. The chi-square in the omnibus test of model coefficient for Step 1 was significant ($p < .001$). In the first step of the regression, the PCL-R was a significant predictor of sexual and violent recidivism ($p < .001$). The PCL-R in the first step had a Wald Statistic of 17.79 and Exp (B)=1.074. These results suggest that the hazard of reoffending is 1.07 times higher for each additional point on the PCL-R.

After controlling for the PCL-R, the second step of the Cox regression was performed using the PCL-R, as well as the MAST and DAST. The chi-square in the omnibus test of model coefficient for Step 2 was significant ($p < .05$). The PCL-R remained a significant predictor with a Wald statistic of 12.88 and Exp(B) of 1.065 ($p < .001$). The results suggest that the hazard of reoffending is 1.06 times higher for each additional point on the PCL-R. The DAST was also a significant predictor of recidivism, Wald statistic of 5.42, Exp (B) of 1.047 ($p < .05$). The results suggest that the hazard of reoffending is 1.05 times higher for each additional point on the DAST. However, the MAST was not a significant predictor of recidivism ($p > .05$). Although the 2-step Cox regression predicting sexual and violent recidivism was significant, exponents were low. A rise of approximately 20 points on the PCL-R or DAST was needed to double the risk of re-offending.

Hypothesis 1 was supported as the PCL-R was a significant predictor of sexual and violent recidivism in step 1 of the Cox regression. Hypothesis 2 was supported as the sample of sexual offenders on average scored in the moderate to high range on the MAST. Although it is not possible to infer the truth of the null hypothesis, results were in agreement with expectation 3. There was no significant difference between the type of index offense and scores on the MAST. In step 2 of the Cox regression, the MAST was not a significant predictor of recidivism which did not support hypothesis 4. Hypothesis 5 was exploratory as there have been mixed results about the DAST's predictive ability of sexual and violent recidivism. The results of the current study supported that the DAST is a predictor of sexual and violent recidivism. Lastly, hypothesis 6 was not supported; the MAST did not moderate the PCL-R's ability to predict sexual and violent recidivism. In step 2 of the Cox regression, the PCL-R remained the best predictor of recidivism regardless of the two covariates that were entered (MAST and DAST).

Chapter 4: Discussion

Previous research has demonstrated that substance abuse is a dynamic criminogenic need (Andrews & Bonta, 2010, Abracen et al., 2017) In addition to influencing overall crime, alcohol abuse appears to be a prevalent problem in sexual offenders (Abracen et al., 2000; Abracen, Looman, et al., 2006; Looman et al., 2004). The presence of problems with alcohol in conjunction with negative emotionality in the sexual offender population appears to influence the individual's probability of engaging in unwanted sexual behaviors (Aromaki & Lindman, 2001; DiFazio., Abracen & Looman, 2001; Looman & Abracen, 2011; Saleh et al., 2009). While there is significant research focusing on sexual offenders, there remains limited research factoring psychopathy, alcohol abuse and sexual offenders (Abracen et al., 2006; D'Silva **et al.**, 2004; Looman et al., 2004; Marshall, 1996). In a sample of 154 sexual offenders, researchers found that individuals who scored high on the PCL-R reoffended at a faster rate than those who scored low on the PCL-R (Looman et al., 2005). A review article however indicated that high MAST scores were able to moderate the PCL-R's ability to predict recidivism in moderate to high-risk sexual offenders (Abracen et al., 2008).

The current study aimed to further the research using a long-term database containing a sample of high-risk sexual offenders. The goal of the current study was also to explore the predictive ability of recidivism in sexual offenders by using the PCL-R, DAST, and MAST.

4.1 PCL-R, DAST and MAST scores of the current study

4.11 Alcohol Abuse. The current study's mean on the MAST appeared to be consistent with past research with sexual offenders. The average MAST score observed in past research with sexual offenders ranged from 5.29 to 10.4. Table 3 depicts MAST scores from varying

sexual offender research. A comparison of offenders by index offense showed that, rapist and child molesters had similar average MAST scores to those noted in previous studies.

While this study had no comparison group of non-sexual offenders, it was possible to observe that this sample of sexual offenders scored much higher than non-sexual violent offender groups utilized in past studies. As denoted in Table 3, the scores of non-sexual violent offenders ranged from 3.04 to 5.5 which signify a mild to moderate alcohol problems. While there appears to be a vast difference between the current study's sample of sexual offenders and other studies non-sexual violent offenders, it was not possible to determine if they were significantly different.

Table 3

MAST, DAST & PCL-R Means in Past Offender Research

Study	Sample	MAST	DAST	PCL-R
Langevin & Lang (1990)	461 Male Sexual Offenders	10.4	3.0	---
Abracen, Looman & Anderson (2000)	106 Male Sexual Offenders 24 Non-Sexual Violent Offenders	Rapist 9.29 CM 7.09 Violent 3.67	Rapist 5.54 CM 4.27 Violent 8.04	---
Looman, Abracen, DiFazio & Maillet (2004)	66 Male Sexual Offenders 29 Non-Sexual Violent Offenders	Rapist 8.12 CM 5.29 Violent 3.04	Rapist 5.35 CM 4.88 Violent 4.76	---
Abracen, Mailloux, Serin, Cousineau, Malcolm & Looman (2004)	519 Sexual offenders	---	---	18.79
Looman. Abracen, Serin & Marquis (2005)	154 Male Sexual Offenders	--	--	22.5
Abracen, Looman, Di Fazio, Kelly & Stirpe (2006)	94 Male Sexual Offenders 21 Non-Sexual Violent Offenders	Sexual 8.41 Violent 5.5	Rapist 7.98 CM 4.85 Violent 6.75	Rapist 25 CM 19 Violent 27
Looman & Abracen (2008)	250 Male Sexual Offenders	8.6	5.5	---

CM= Child Molesters

4.12 Drug Abuse. Scores on the DAST have varied over past studies with offenders assessed or treated at the RTCSOTP. Results from past studies on the DAST have ranged from 4.27 to 7.98 (Refer to Table 3). The current study found that rapists scored significantly higher on the DAST compared to child molesters. Previous studies have reported a notable difference between rapists and child molesters on drug abuse history which coincides with the results of the current study. For example, Abracen et al., (2006) observed that rapists scored significantly higher on the DAST compared to child molesters (mean difference=3.12, $p < .05$). Another study found similar results, indicating that men who offended against women (ages 18 or older) had significantly more problems with drug abuse according to the DAST when compared to men who offend against children (11 years and younger; Baltieri & Guerra de Andrade, 2008). Logistic regression indicated that the DAST was a reliable predictor of group membership (Wald statistic=12.66, $p < .01$) inferring there was a meaningful difference in drug consumption between rapists and child molesters. While there was a significant difference between rapists and child molesters in the current sample, both groups still scored on average in the mild to moderate range when observing drug problems.

4.13 Psychopathy. Based on past research, an average in the low 20's on the PCL-R was expected in a sample of moderate to high-risk sexual offenders. In previous studies involving offenders from the RTCSOTP and other Canadian federal programs, the average ranged from 18 to 25. In the current study, rapists and child molesters significantly differed on the PCL-R from a statistical standpoint. Rapists had a mean score of 23.31 and child molesters had a mean score of 19.15. Similar results were observed in Abracen et al., (2006). Rapists on average had a PCL-R score of 25 and child molesters had an average score of 18. In the Abracen et al., (2006) study, a Scheffe comparison indicated that this mean difference was statistically significant ($p < 0.01$).

4.2 Recidivism

4.21 Base Rate. The analysis of the current sample of sexual offenders revealed that when sexual offenses were used at the definition of recidivism, the sample had a base rate of 10.9%. Base rate refers to the number of sex offenders who commit additional offenses after being released from incarceration (Abracen et al., 2011). When the definition of recidivism included both sexual and violent offenses, the sample had a base rate of 29.96%. The current study's results are comparable to that of other reputable treatment programs for sexual offenders. A meta-analysis (Hanson et al., 2002), reported the base rate of 43 (n=5078) studies of sex offenders who attended treatment programs. The results indicated that 12.3% reoffended when just sexual offenses were observed and 27.9% when general reoffending was observed. Hanson and Morton-Bourgon, (2005) conducted a meta-analysis observing 83 recidivism studies (n=29,450). Results revealed that on average, 13.7% reoffended sexually (n=19,267; 73 studies) and 36.2% reoffended in general (n=12,708; 56 studies). Hanson and Morton-Bourgon's (2005), meta-analysis included a violent recidivism group (including sexual recidivism), which is congruent with our current study's definition of recidivism. The results indicated that 14.2% reoffended in violent nature, including sexually (n=11,361; 29 studies). A more recent meta-analysis observed 27 studies (n=4,939) of treated sexual offenders (Schmucker & Lösel, 2015). The results indicated that 10.1% of offenders reoffending sexually and 32.6% reoffended in general. The results of an additional meta-analysis continued to support the sexual and general base rate of reoffending of sexual offenders (Soldino & Carbonell-Vayá, 2017). Seventeen studies (n= 3,659) observed the recidivism of treated sexual offenders. The analysis revealed 13.12% reoffended sexually and 46.53% reoffended in general. The meta-analysis also included a violent recidivism group (including sexual recidivism). The results revealed that 25.5%

reoffended violently, including sexually. The overall base rate for sexual recidivism for the past and current studies appear to be consistently in the 10-15% range. Even with a discrepancy of 15 years between the publication of the meta-analyses, the results remained similar suggesting that treatment programs have adapted appropriately over the years. The base rate for violent recidivism (including sexually) between the current study and the two meta-analyses appear to vary more than with just sexual recidivism.

Three of the meta-analysis also observed studies of untreated sex offenders as a comparison group (Hanson et al., 2002; Schmucker & Lösel, 2015; Soldino & Carbonell-Vayá, 2017). Offenders reoffended sexually ranging from 13.7% to 17.94% and for all crimes from 39.2% to 52.41%. The current study did not observe a comparison untreated group. However, the base rates for the untreated groups in previous studies are notably higher than the treated groups.

4.22 PCL-R, DAST and MAST's predictive ability. The current study demonstrated that the PCL-R was a significant predictor of recidivism. The current results reinforce previous research indicating that the PCL-R is not only an accurate measure of psychopathy but is also useful in assessing the risk of reoffending in offenders (Abracen & Looman, 2016; Barbaree, 2005; Hare, 2016; Hawes et al., 2013; Hemphill & Hare, 2004; Lally, 2003). The PCL-R was found to be the best predictor of the three variables (PCL-R, MAST & DAST) which is not unexpected given the available research.

In the current study, the DAST was a significant predictor of recidivism. As previously mentioned, the result of the DAST as a significant predictor of recidivism has varied throughout research (Abracen & Looman, 2011; Långström et al., 2004). The results of the current study suggest that drug abuse should not be overlooked when observing the recidivism in moderate to

high-risk sexual offenders. Alcohol and drug abuse appear to be of concern in the sexual offender population (Abracen & Looman, 2016; Abracen et al., 2000; Abracen et al., 2017). As previously mentioned, studies have shown that while alcohol abuse and sexual offenses are more primarily associated with negative emotionality, drug abuse is primarily associated with disinhibited behavior (McGue et al., 1999). Disinhibited behaviors associated with drug use might impact overall criminality in offenders when observing both violent non-sexual and sexual offenses in sexual offenders (Baltieri & Guerra de Andrade, 2008; Boles & Miotto, 2003; Hoaken & Stewart, 2003). Studies have demonstrated that drug abuse is a significant risk factor for offenders in general (Abracen et al., 2017; Baltieri & Guerra de Andrade, 2008). There is some evidence to suggest that sexual aggressors often commit non-sexual violent crimes and it is speculated that drug abuse might be associated with these acts. The significant Cox regression in the current study observed both sexual and non-sexual violent recidivism; therefore, a history of drug abuse might have impacted the overall criminal recidivism of the sample.

A unique finding in this study was that the MAST was not a significant predictor of recidivism in a sample of moderate to high-risk sexual offenders. Past research supports a strong association between psychopathic offenders and substance abuse (Abracen et al., 2008). The association between psychopathy and drug abuse however, is stronger in comparison to the association between psychopathy and alcohol abuse (Taylor & Lang, 2006). The MAST was expected to be a significant predictor of recidivism in sexual offenders because of previously described results. There is the possibility the association between drug abuse and psychopathy had a greater impact on recidivism than that of alcohol abuse. Previous studies have also speculated that the lack of behavioral control in psychopathic offenders may be limited to the

degree that alcohol does not have the same disinhibiting effects that it would in nonpsychopathic individuals (Rice & Harris, 1995).

While the PCL-R and the DAST were significant predictors of recidivism, it is important to note that the hazard ratios were modest. The PCL-R in Step-2 had a hazard ratio of 1.065 suggesting that an individual with an elevated PCL-R score has a 51.5% of reoffending sooner than offenders with lower scores. The DAST in Step-2 had a hazard ratio of 1.047 suggesting that an individual with an elevated DAST score has a 51.1% of reoffending sooner than those offenders with lower scores. The results suggest that the odds of a sexual offender with an elevated PCL-R and DAST score reoffending is just over chance compared to those without an elevated PCL-R and DAST score.

4.2 MAST as a Moderator of the PCL-R

Contrary to what was mentioned in the review article, the MAST did not moderate the PCL-R's ability to predict recidivism. A possible explanation for these findings is while Abracen, et al., (2008) controlled for drug abuse, they expressed their inability to compute any analyses with the High DAST and mild to moderate MAST group, as a result of a low sample size for the specific group. As the current study did not divide the sexual offenders into multiple groups, the inclusion of those who scored high on the DAST might have impacted the results. The results described by Abracen et al., (2008) of the MAST moderating the PCL-R's predictive ability of recidivism was based on the High MAST/mild to moderate DAST group. Offenders who scored high on the DAST and mild to moderate on the MAST were excluded from their analysis. Therefore, the finding described in the review article (Abracen et al., 2008) that high PCL-R and low PCL-R sexual offenders, who scored high on the MAST do not re-offend at significantly different rates, might only occur in a specific group of sexual offenders.

4.3 Clinical Implications

While the current study may have found contradictory results in comparison to previous studies, the results of this current study contributed important information to the research of psychopathic sexual offenders. The current study demonstrated that drug abuse is an important factor to consider in a moderate to high-risk sexual offender treatment programs. The results also supported the continued use of the PCL-R to measure psychopathy and predict recidivism in moderate to high-risk sexual offenders. While the current study did not find alcohol abuse to be a significant predictor of recidivism, this is contrary to many previous studies (Abracen & Looman, 2016; Abracen et al., 2017; Looman & Abracen, 2011). Subsequent studies observing recidivism and alcohol abuse in sexual offenders should be performed before alcohol abuse is determined to not be a significant predictor in moderate to high-risk populations.

Studies of Incarcerated offenders, using well-validated measures for substance abuse and psychopathy has not been researched intensely. The current study not only used the MAST, DAST and the PCL-R but also used a large, long term database. Additional research using the PCL-R to define psychopathy and recidivism as the event provides crucial information to the field of high-risk sex offenders. While the results did not support the MAST as a significant predictor of recidivism, in addition to the PCL-R, the DAST was significant. The current results support the importance of incorporating substance abuse treatment in treatment programs for high-risk sexual offenders. As stated by Lösel (1998), the best approach in treating high-risk sexual offenders with psychopathic traits is to carry out methodologically rigorous evaluations to unearth strategies in reducing criminal recidivism and violent behaviors.

4.4 Limitations and Future Directions

While the current study added valuable information to the research of psychopathic sexual offenders, it does not come without limitations. One limitation is that the current study did not directly measure negative emotionality. As previously mentioned, it was suggested that a common factor between sexual offenders' intimacy deficits, loneliness and alcohol abuse is negative emotionality. However, none of the psychometric tests in the current study measured emotionality or coping styles.

The study of recidivism of sexual offenders remains unclear, as they have an unusually low base rate of reoffending (Abracen & Looman, 2004). The degree to which sexual offenders re-offend sexually may help explain why the omnibus test with just sexual recidivism as the event, was not significant. Studies have demonstrated that during a follow-up period of four to five years, only 13% of sexual offenders reoffended sexually (Hanson & Bussière, 1998). Previous studies have also demonstrated that sexual offenders are more likely to commit a nonsexual crime after being released than another sexual crime (Hanson & Bussiere, 1998). Persistent sexual offenders partake in a variety of criminal activity and do not commit sexual offenses exclusively (Lussier, LeBlanc & Proulx, 2005). Quinsey et al. (2006) suggested that violent recidivism should be used as the dependent measure when observing the recidivism of sexual offenders. The study explained that using violent recidivism instead of sexual recidivism would encompass all violent criminal acts whether it is sexual or not in nature. Using violent recidivism as the dependent would allow better accuracy and increases the base rate of offending. Sexual offenses may also be prosecuted as violent offenses for a variety of reasons. By using violent recidivism as the dependent variable, crimes of sexual nature that were pleaded down to violent crime would be included. Using violent recidivism including sexual recidivism

was employed in the current research and produced significant results. The rate of sexual reoffending in the current sample remained mostly consistent with other research including sexual offenders in a treatment program (Looman et al., 2000).

The current study observed the PCL-R within a sample of moderate to high-risk sexual offenders but only in terms of the PCL-R total score. There have been mixed results in previous research as to significant differences between the predictive ability for recidivism of PCL-R Factor 1 and Factor 2 scores. (Hawes et al., 2013). In terms of sexual recidivism, a meta-analysis demonstrated that Factor 2 ($d=0.44$) was a better predictor of sexual recidivism compared to Factor 1, which was not a significant predictor of sexual recidivism (Hawes et al., 2013). However, Olver and Wong (2003) found that Factor 1 was more correlated with sexual recidivism than Factor 2 in a sample of 113 sexual offenders. The current study might have benefited from looking at different Factors and even Facets to determine if one section of the PCL-R was a better predictor of recidivism in a moderate to high-risk sexual offender population.

Although the current study has added additional research using well-validated methods to measure drug abuse, the DAST does not measure the type of drug being abused (Abracen et al., 2008; Baltieri & Guerra de Andrade, 2008). For instance, studies have demonstrated that consuming drugs like alcohol and amphetamines might enhance aggression, cocaine might induce sexual exhilaration and LSD reduce sexual inhibition (Kalant, 1973). Contrary to the above drugs, consuming narcotics like heroin have been observed to reduce sexual interest and potency. Langevin and Lang (1990) observed the mood of sexual offenders who consumed drugs. They indicated that the majority of offenders associated positive affect while using alcohol or drugs. However, alcohol and tranquilizers were mostly associated with depression and

alcohol and amphetamines were mostly associated with hostile feelings (Langevin and Lang, 1990). Offenders who reported feeling the most out of control were under the influence of cocaine and hallucinogens. The findings described by Langevin and Lang (1990) demonstrate that the failure to control for the type of drug being abused might obscure some significant patterns between drug abuse and recidivism (Abracen et al., 2008).

Finally, a limitation present in any study working with a criminal database is that the information available is limited to what was previously collected. Some of the tests included in the current study were self-report measures. The offenders may have not fully endorsed some items or may be in denial and minimizing their difficulties (Abracen & Looman, 2004). Some studies have suggested that offenders may over report alcohol consumption to minimize their involvement in the crime and enhance situational factors (Seto & Barbaree, 1995). Individuals who score high on the PCL-R have been observed to do the opposite and gloat about their violent and aggressive behaviors. The database used in the current study was based on the Federal Criminal System which includes individuals who committed criminal offenses with a minimum of a 2-year sentence. Using individuals only in the federal system proposes that there might be missing data on individuals who committed offenses at a provincial level. There is also the possibility that these individuals may have committed a new offense but were never convicted or caught for the said crime.

Many future directions could be undertaken by researchers to extend on the present findings and the literature of moderate to high-risk sexual offenders. Given the limitation regarding not measuring negative emotionality, future research could utilize a psychometric test to measure emotionality in offenders. Looman et al. (2004) utilized the CISS emotion processing scale and the Social Intimacy Scale to classify sexual offenders but did not observe whether it had

predictive properties of recidivism. The concept of negative emotionality, in combination with alcohol abuse, may have an impact on recidivism. The current study also lacked a comparison group. The examination of a moderate to high-risk non-sexual comparison group would allow researchers to determine if the results of this study were due to overall criminality or if it was a specific finding in sexual offenders. The current study only observed sexual offenders as a whole when observing the predictive ability of the MAST, DAST and PCL-R on recidivism. Future studies may want to consider a Cox regression with each type of index offense to determine if any of the psychometric tests have more predictive ability for a specific type of sexual offender. A final direction that may be beneficial in future research is observing offender files to determine the drug they reported abusing. With the recent legalization of marijuana in Canada and past research on the emotional impact of a variety of drugs, it would be beneficial to observe the type of drug each offender reported abusing and its impact of recidivism.

4.5 Conclusion

The current study contradicted the previously mentioned information that the MAST moderated the PCL-R's ability to predict sexual and non-sexual violent recidivism. The results of this study indicated that psychopathy remained the most significant predictor of recidivism, followed by drug abuse but not alcohol abuse. In conjunction with previous research, the results of this study emphasized that substance abuse in psychopathic sexual offenders needs to be addressed during treatment. A study previously mentioned that the relationship between sexual offenses and substance abuse is a multidimensional and complex matter (Abracen et al., 2017; Testa, 2002). There have been many variables suggested as moderators in that relationship, and in the case of sexual offenders, psychopathy and substance abuse might be two of them. Aiding in determining factors of recidivism will help in bettering treatment programs and providing

clinicians with suggested approaches to treatment. Maximizing the reduction of reoffending in sexual offenders, will, in turn, limit the number of victims of sexual assaults. The effects of sexual assaults on the victims include long term psychological and physical consequences (Abracen et al., 2017; Benoit et al., 2015). As stated in Abracen et al., (2008), a modest reduction in the use of aggression and violence by psychopaths would be an immense benefit to society.

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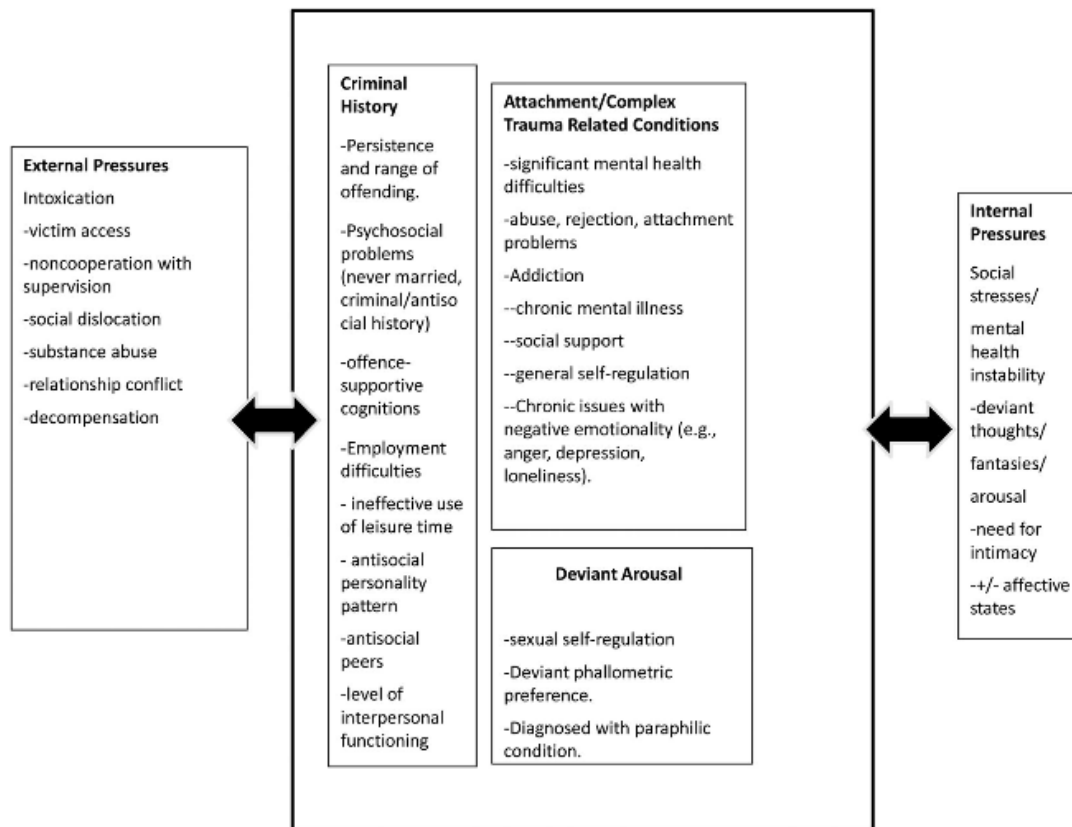
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Appendix A

The Integrated Risk Assessment and Treatment System (IRATS) Roadmap



Abracen, Looman & Ferguson, 2017

Appendix B

Problems Associated with Substance Abuse

**A Sample of Clinical and Social Problems
Associated With Substance Abuse**

-
- brain damage and dysfunction, in the extreme, Wernicke's Syndrome or Korsakoff's Syndrome
 - complicates treatment of other problems
 - deterioration in health, e.g. cirrhosis, hypoglycaemia, gastrointestinal problems
 - dysfunctional family and marital relations
 - dysphoric mood with chronic abuse
 - endocrine abnormalities, impotence and/or feminization
 - exacerbates existing cognitive impairment
 - exacerbates sexual needs in young offenders
 - loss of employment and/or loss of productivity
 - pathological (idiosyncratic) intoxication
 - sex crimes
 - some substances elicit abnormal mental states or psychosis
 - tolerance and withdrawal
 - violent behavior and crimes
-

Langevin & Lang, 1990

Appendix C

PCL-R Items and Factor Loading

Items in the Hare Psychopathy Checklist - Revised

Item	Factor Loading
Glibness/superficial charm	1
Grandiose sense of self-worth	1
Need for stimulation/proneness to boredom	2
Pathological lying	1
Conning/manipulative	1
Lack of remorse or guilt	1
Shallow affect	1
Callous/lack of empathy	1
Parasitic lifestyle	2
Poor behavioral control	2
Promiscuous sexual behavior	-
Early behavior problems	2
Lack of realistic, long-term goals	2
Impulsivity	2
Irresponsibility	2
Failure to accept responsibility for own actions	1
Many short-term marital relationships	-
Juvenile delinquency	2
Revocation of conditional release	2
Criminal versatility	-

Note: A dash indicates the item does not load on either factor.

(Source: Cooke, Michie, Hart, & Hare, 1999)

Cooke, D.J., Michie, C., Hart, S.D., & Hare, R.D., 1999

Appendix D

Clinical Profile of a Psychopath

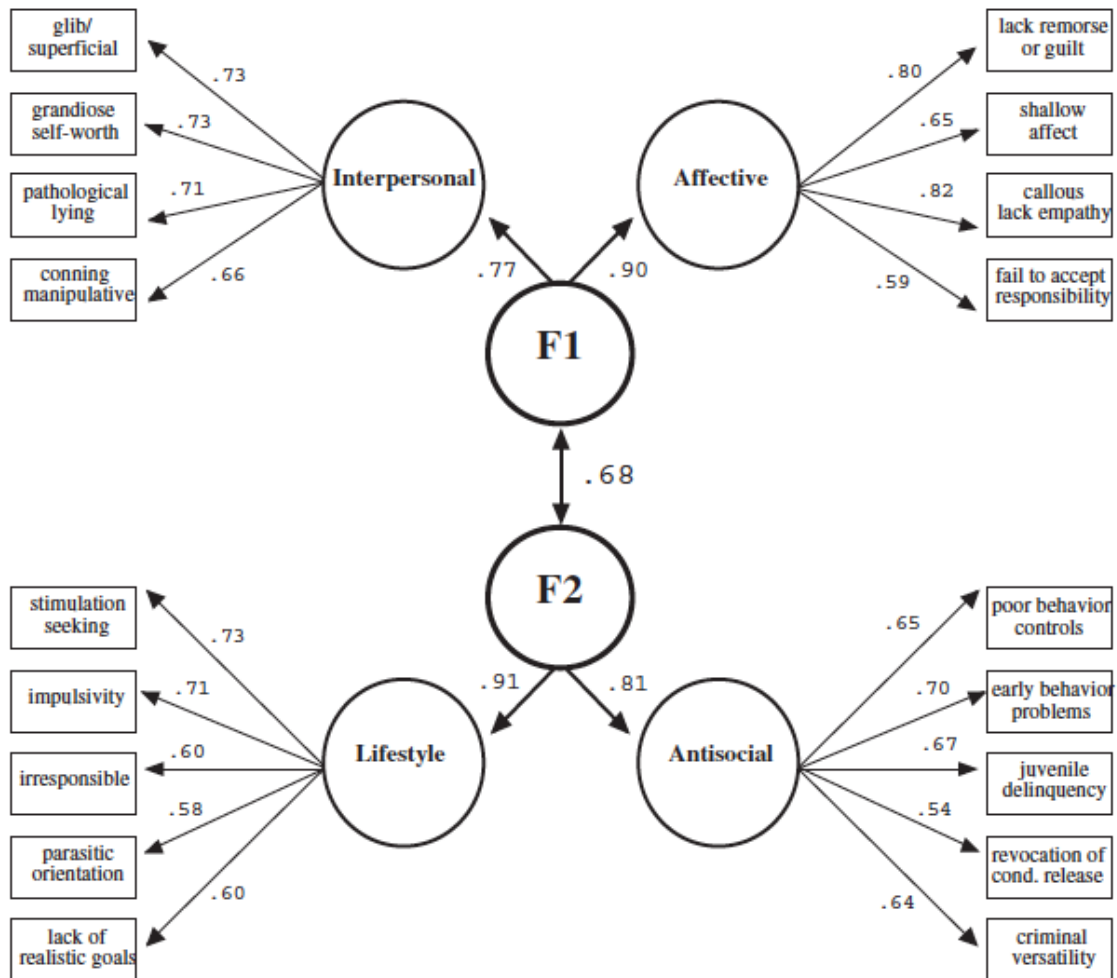
Items and Factors in the Hare PCL Scales

PCL-R
Factor 1 (F1)
Interpersonal
1. Glibness/superficial charm
2. Grandiose sense of self worth
4. Pathological lying
5. Conning/manipulative
Affective
6. Lack of remorse of guilt
7. Shallow affect
8. Callous/Lack of empathy
16. Failure to accept responsibility
Factor 2 (F2)
Lifestyle
3. Need for stimulation
9. Parasitic lifestyle
13. No realistic, long-term goals
14. Impulsivity
15. Irresponsibility
Antisocial
10. Poor behavioral controls
12. Early behavioral problems
18. Juvenile delinquency
19. Revoke conditional release
20. Criminal versatility

Hare, 2003

Appendix E

PCL-R Four Correlated Factor Model



Hare, 2003

Appendix F

Laurentian Ethics Approval



APPROVAL FOR CONDUCTING RESEARCH INVOLVING HUMAN SUBJECTS
Research Ethics Board – Laurentian University

This letter confirms that the research project identified below has successfully passed the ethics review by the Laurentian University Research Ethics Board (REB). Your ethics approval date, other milestone dates, and any special conditions for your project are indicated below.

TYPE OF APPROVAL / New <input checked="" type="checkbox"/> / Modifications to project / Time extension	
Name of Principal Investigator and school/department	Alexandra Bazinet, supervisor Paul Valliant, Psychology
Title of Project	Alcohol Abuse and Psychopathy in Relations to Recidivism of Sexual Offenders
REB file number	6012421
Date of original approval of project	November 22, 2017
Date of approval of project modifications or extension (if applicable)	
Final/Interim report due on: (You may request an extension)	November 22, 2017
Conditions placed on project	

During the course of your research, no deviations from, or changes to, the protocol, recruitment or consent forms may be initiated without prior written approval from the REB. If you wish to modify your research project, please refer to the Research Ethics website to complete the appropriate REB form.

All projects must submit a report to REB at least once per year. If involvement with human participants continues for longer than one year (e.g. you have not completed the objectives of the study and have not yet terminated contact with the participants, except for feedback of final results to participants), you must request an extension using the appropriate LU REB form. In all cases, please ensure that your research complies with Tri-Council Policy Statement (TCPS). Also please quote your REB file number on all future correspondence with the REB office.

Congratulations and best wishes in conducting your research.



Rosanna Langer, PHD, Chair, Laurentian University Research Ethics Board

Appendix G

RTCSOTP Consent Form

SEX OFFENDER TREATMENT PROGRAMME REGIONAL TREATMENT CENTRE (ONTARIO)

CONSENT TO ASSESSMENT FORM

I, _____ FPS# _____
of _____ Institution consent to participate in a 3-4 week Assessment of
Sexual Behaviour at the Regional Treatment Centre (Ontario).

The assessment procedure has been explained to me. I understand that I will be admitted to the RTC(O) to take part in an assessment consisting of the completion of a number of paper and pencil tests, a phallometric assessment consisting of the measuring of my sexual responses to a number of audio-taped and visual sexual stimuli, some of which involve depictions of sexual activity with children and adults. I also understand that I will be interviewed by a psychologist.

My full cooperation with the assessment is expected. While living on the unit I am expected to follow the unit rules, which include abstaining from the use of drugs and alcohol, no fighting with other inmate/patients, and respecting the confidentiality of those involved in treatment.

Limited Confidentiality

I understand that professional confidentiality will be maintained, but there are important limitations to that confidentiality. I understand that the information obtained in treatment will be summarized in a report and that anything I say may be quoted in that report. I also understand that the Treatment Team will consult with my Case Management Team during the treatment process. The Final Treatment Report will be placed on the Psychology, Treatment Centre, and Case Management files, as well as on the CSC nation-wide computer system (OMS). I also understand that a copy of the report is available to me. I understand that case management staff, the National Parole Board and anyone else with legal authority will have access to the report. For example, in the event of a release which the Warden considers to be a high risk release, and in the case of detained offenders being released on Warrant Expiry, information contained in the report may be included in information released to community treatment facilities and the police.

I understand that the Treatment Team, as professional, may be obliged by law to report to the appropriate authorities any disclosures made by myself that reveal in sufficient detail any previously unreported offense.

I also understand that if there is concern that I might harm myself or someone else the treatment team is obliged to intervene even if confidentiality must be broken.

I understand that under the Ontario Child and Family Services Act a professional, must report child abuse to a Children's Aid Society. Therefore if I give specific information about child abuse that is not already known to Children's Aid, that information might need to be given to Children's Aid.

I understand that the results of my participation in the assessment may be used for research purposes. However, I have been assured that such results will not be made public in any way which may identify me personally.

Upon completion of the assessment I will be returned to my parent institution.

I understand the above, and have had the opportunity to ask questions, and hereby agree to the assessment which is being offered me.

SIGNED: _____
DATED: _____
WITNESSED: _____
NAME OF WITNESS: _____

Appendix H

The Michigan Alcoholism Screening Test (MAST)

1. Do you feel you are a normal drinker? (By normal we mean you drink less than or as much as most other people.)	Yes	No
2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening?	Yes	No
3. Does your wife, husband, a parent, or other near relative ever worry or complain about your drinking?	Yes	No
4. Can you stop drinking without a struggle after one or two drinks?	Yes	No
5. Do you ever feel guilty about your drinking?	Yes	No
6. Do friends or relatives think you are a normal drinker?	Yes	No
7. Are you able to stop drinking when you want to?	Yes	No
8. Have you ever attended a meeting of Alcoholics Anonymous (AA)?	Yes	No
9. Have you gotten into physical fights when drinking?	Yes	No
10. Has your drinking ever created problems between you and your wife, husband, a parent, or other relative?	Yes	No
11. Has your wife, husband (or other family members) ever gone to anyone for help about your drinking?	Yes	No
12. Have you ever lost friends because of drinking?	Yes	No
13. Have you ever gotten into trouble at work or school because of drinking?	Yes	No
14. Have you ever lost a job because of drinking?	Yes	No
15. Have you ever neglected your obligations, your family or your work for two or more days in a row because you were drinking?	Yes	No
16. Do you drink before noon fairly often?	Yes	No
17. Have you ever been told you have liver trouble? Cirrhosis?	Yes	No
18. After heavy drinking have you ever had Delirium Tremens (D.T.s) or severe shaking, or heard voices or seen things that really were not there?	Yes	No
19. Have you ever gone to anyone for help about your drinking?	Yes	No
20. Have you ever been in a hospital because of drinking?	Yes	No
21. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem that resulted in hospitalization?	Yes	No
22. Have you ever been seen at a psychiatric or mental health clinic, or gone to any doctor, social worker, or clergyman for help with an emotional problem, where drinking was part of the problem?	Yes	No
23. Have you ever been arrested for drunk driving, driving while intoxicated, or driving under the influence of alcoholic beverages? (If YES, how many times? _____)	Yes	No
24. Have you ever been arrested, or taken into custody even for a few hours, because of other drunk behavior? If YES, how many times? _____)	Yes	No

Appendix I

Drug Abuse Screening Test (DAST)

1. Have you used drugs other than those required for medical reasons?	Yes	No
2. Have you abused prescription drugs?	Yes	No
3. Do you abuse more than one drug at a time?	Yes	No
4. Can you get through the week without using drugs?	Yes	No
5. Are you always able to stop using drugs when you want to?	Yes	No
6. Have you had "blackouts" or "flashbacks" as a result of drug use?	Yes	No
7. Do you every feel bad or guilty about your drug use?	Yes	No
8. Does your spouse (or parents) ever complain about your involvement with drugs?	Yes	No
9. Has drug abuse created problems between you and your spouse or your parents?	Yes	No
10. Have you lost friends because of your use of drugs?	Yes	No
11. Have you neglected your family because of your use of drugs?	Yes	No
12. Have you been in trouble at work (or school) because of drug abuse?	Yes	No
13. Have you lost your job because of drug abuse?	Yes	No
14. Have you gotten into fights when under the influence of drugs?	Yes	No
15. Have you engaged in illegal activities in order to obtain drugs?	Yes	No
16. Have you been arrested for possession of illegal drugs?	Yes	No
17. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No
18. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding, etc.)?	Yes	No
19. Have you gone to anyone for help for drug problem?	Yes	No
20. Have you been involved in a treatment program specifically related to drug use?	Yes	No